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ABSTRACT

The third report from a comprehensive Unesco study, this document traces the history of the application of computer-based technology to the book distribution process in the United States and indicates functional areas currently showing the effects of using this technology. Ways in which computer use is altering book distribution management activities are examined, including ordering, order processing, delivery, payment processing, and warehouse functions. Following a brief introduction, the first section discusses the general use of computer technology, changes in book distribution procedures, and the context and methodology of the report. Section II describes the activities of individuals, companies, and organizations whose efforts have brought about technological change in book distribution in the United States. Section III analyzes the various component steps in the distribution chain and the organizations involved in them; areas are highlighted which have already experienced change due to technological advances and areas where such changes can confidently be predicted to occur in the near future. The final section outlines the various types of organizations which participate in the introduction of new technologies to the distribution process, identifies individuals in key leadership roles, and suggests emerging trends for the future. (JB)

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THE FUTURE OF THE BOOK

PART III - NEW TECHNOLOGIES IN BOOK DISTRIBUTION: THE UNITED STATES EXPERIENCE

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UNITED NATIONS EDUCATIONAL,
SCIENTIFIC AND CULTURAL ORGANIZATION

THE FUTURE OF THE BOOK

PART III

New Technologies in Book Distribution: the United States Experience

A report prepared by SKP Associates
for the Center for the Book
Library of Congress

(C)

UNESCO
1984

PREFACE

Books are among the oldest media of mass communication; their permanence as artifacts that can be manipulated over centuries and across frontiers has assured them a privileged place in society. Yet the book is no longer unique in this sense. Modern technology is challenging both the form and function of the book and its role as the principal instrument for transmitting accumulated knowledge and new ideas.

Deciding that it was of vital importance to place these new circumstances into perspective, Unesco has initiated a comprehensive study to explore the character of these changes and their expected impact on the future. As a first step, a number of well-known experts from various book professions and regions of the world were gathered together to advise on the nature and scope of the issues that called for further study.

The present document--the third to appear within the framework of this study--traces the history of the application of computer-based technology to the book distribution process in the United States and indicates those functional areas currently showing the effects of the use of this technology, as well as those to which the new technology will be applied in the near future. It includes references to the individuals and organizations whose leadership and activities were instrumental in these technological applications. It also indicates the conditions which existed when automation was introduced in the 1960s and the preconditions for implementing technological systems today. The study was prepared for the Center for the Book in the Library of Congress, Washington, D.C., by Sandra K. Paul and Susan Kranberg of SKP Associates, a research team specializing in U.S. publishing and book distribution projects and having considerable experience in such groundbreaking efforts as the Association of American Publishers Book Distribution Task Force and Distribution Project, the Book Industry Systems Advisory Committee, the Book Industry Study Group and the National Information Standards Organization.

The authors are responsible for the choice and the presentation of the facts contained in this text, and for the opinions expressed therein, which are not necessarily those of Unesco and do not commit the Organization.

TABLE OF CONTENTS

SECTION		Page
I	Introduction	5
	The Use of the Computer	6
	Changes in the Distribution Area	7
	Context of the Report	8
	Methodology of the Report	9
II	Historical Achievements	11
	Association of American Publishers	11
	Book Industry Study Group	11
	Book Industry Systems Advisory Committee	12
	American Booksellers Association	14
	National Association of College Stores	15
	American National Standards Institute	16
III	The Distribution Process	17
	The Purchasing Decision	17
	Placing an Order	19
	Internal Order Processing at Vendor Locations	19
	Picking, Packing and Shipping of Books	20
	Receiving and Processing Books	22
	Generating Claims	22
	Returns Processing	22
	Invoicing and Payment	23
	Warehousing Functions	23

Page

SECTION

IV Preconditions for the Introduction of New Technologies 25

The Participants 25

The U.S. Government 26

Leadership 26

Historical Preconditions for Automation 27

Preconditions for Tomorrow 28

V Conclusion 31

APPENDIXES

A List of abbreviations 33

B Organizations Interviewed for this Report 34

C Mergers & Acquisitions in Book Publishing 1962-1984 .. 35

SECTION I--INTRODUCTION

Those at the receiving end of the book distribution chain have long expressed their concern with this inefficient, costly, and time-consuming activity. As early as 1929, O. H. Cheney was commissioned by the National Association of Book Publishers (forerunner to the Association of American Publishers) to study the book distribution process. His 'Economic Survey of the Book Industry' and a special 'Supplementary Report of the Economic Survey of the Book Industry for Bookselling Executives,' published by the National Association in 1931, described the period from 1930 to 1931 and analyzed the whole range of book publishing, from the necessity of increasing book readership to the difficulties faced by manufacturers, publishers, wholesalers, retailers and librarians. Cheney made a large number of evaluations and contentions. Those that relate to this Report were:

'The distribution system of the industry, as represented by its outlets, is unsystematized, underdeveloped, ineffective, unprofitable and static.' (page 278).

'The major handicaps to better distribution are the backwardness of reading; the present unsound methods of increasing outlets; the absence of any methods for improving bookselling; and the absence of methods for improving distribution to the retailer.' (pages 278-279).

'The methods for reaching the book trade are not fully utilized.' (page 279).

'Real merchandising control by the publisher is impossible without merchandising control by the bookseller. The publisher cannot know what or when to publish or reprint unless he knows what the bookseller is actually selling--not what he is ordering or re-ordering ... The minimum that the bookseller must know includes: a) The stock ... b) The customers and their tastes. c) The sales, by title ...' (Supplementary Report, p.21).

Some solutions he suggested were:

'The installation of record systems in every publishing house, bookstore and manufacturing plant which will give to the management complete and accessible information regarding every transaction.' (Supplementary Report, p.6).

'The preparation by each house, store or plant of recorded instructions covering every phase of the work of every employee.' (Supplementary Report, p.7).

'The development of a plan of localized registration of reader interests... so that the proper unbiased information on books on any subject reaches every interested individual, no matter where located.' (Supplementary Report , p.7).

'Stock codes could be developed for the whole industry, each title receiving a code number. This would simplify records and orders and provide for uniform and easy classification of titles by the bookseller ...' (Supplementary Report, p.52).

Unfortunately, most of the problems related to book distribution that Cheney delineated more than 50 years ago still exist today. Some improvements have been made by individual companies and organizations, but it is only now, in 1984, that the new technology is beginning to produce meaningful, industry-wide change.

This Report presents an overview of some of the effects of applying the new electronic and computer-based technologies to the book distribution process, and projects a likely scenario for the future. The Report concentrates on applications in the United States of America, but will note relevant events in other countries that have affected or may significantly affect the United States.

The Use of Computer Technology

Why has so little in the book distribution process changed between Cheney's 1931 report and the year 1984? We believe that there are several reasons. High on the list is the lack of attention to this area by book publishers, who have traditionally concentrated more on the psychological rewards of publishing--such as searching for manuscripts, grooming excellent authors, and successfully publishing a work--than on the more mundane aspects of the business. This is not hard to understand when you consider that the often precariously low return on investment in book publishing suggests that most publishers are not in the business for the financial rewards. For instance, a 1982 survey by the Association of American Publishers indicated that the average net income of the responding book publishers, before taxes, was 2.4% for mass market paperback publishers and 4.1% for trade publishers--less than one can achieve by simply putting one's money in a savings bank.

A second important reason relates to the lack of capital necessary to finance technological improvements. In the late 1960s many other types of businesses had invested in data processing equipment and were, in fact, making the transition from 'Automatic Data Processing (ADP)' and punch paper tape to 'IBM Cards' and 'Electronic Data Processing (EDP).' By 1967 the number of installed computers had reached 40,000 in the U.S.(as compared to only 10 or 15 units in 1950), with an estimated value of $13 billion. Of every $1 million that U.S. business spent for new plant and equipment in 1967, a total of $63,000 went for computing. ('Computers: The Booming State of the Art,' Newsweek, August 19, 1968, p. 67-71).

This use of the then-new technology was noticeably absent from book publishing houses; it simply cost too much to purchase and install equipment. In 1966, the average large computer cost about $1 million if purchased outright, while a 'mid-sized' system could cost between $10,000-$30,000 per month in rental fees. (Dun's Report, 1966, p.140). Large, experienced EDP staffs were required to develop unique applications software and to run and maintain complex computer facilities. Independent, privately-owned book publishers frequently lacked adequate capital even to buy the rights to literary properties from authors; computerization was beyond the financial means of most of them.

Another related factor was--and still is--the small size of the entire book industry, which precluded interest in and development of applications software for the industry by major computor vendors. In 1972, for instance,

the total gross revenue of all U.S. book publishers combined was $2,825.2 million (John P. Dessauer, Book Industry Trends, 1977). This is less than the gross revenue of the Greyhound Bus Company, which was then number 31 on the Fortune 500 list with sales of $2,903.6 million. IBM, noted for its strong software application support of its computer hardware, could not justify investing in the research and development of programmes for the book industry, when the same investment in a non-book related programme could result in a potential sales base millions of times greater.

Despite these liabilities and limitations, some publishers did buy computers and start working with them in the early 1960s. Among the first were such companies as Random House, Prentice-Hall, and Houghton Mifflin. Each of these publishers justified their investment in the new technology on the basis of the rising costs of book distribution. Unfortunately, they were forced to hire data processing professionals who had little or no understanding of book publishing, since these pioneers in automation had no pool of trained technicians with knowledge of the industry from which to select. These programmers and systems analysts were charged with the task of developing internal order processing, inventory control, and book distribution systems, but were given little insight into the book-publishing business--its goals, customers or methods. The systems they developed were fraught with problems. In those days the common excuse for delayed shipment or invoicing was, 'We've just installed our new computer!'

Changes in the Distribution Area

The low level of concern to modernize book distribution began to change in the 1970s and 1980s as the slumping U.S. economy forced book publishers, along with other business people, to seek cost reductions wherever possible. They looked to the new technologies to reduce the cost of labour and to make their staffs as efficient as possible. Concurrently, the leadership in publishing increasingly moved from the editor or marketing expert to the business person, frequently as a result of the acquisition of the publishing house by a sophisticated electronics or communication conglomerate. (A list of the publishers acquired by such organizations appears as Appendix C). Most large publishers--the typical 20% of the industry who account for 80% of the sales volume--had purchased computer equipment. Smaller publishers sought computerized services from a time-sharing company, service bureau, or turnkey (hardware programmed by a vendor to perform a specific function at 'the turn of a key') computer system vendor.

Important book purchasers (i.e. the large bookstore chains and major wholesalers) were also automating their inventory and sales functions during this period of time, using computers to determine which books should be ordered initially or re-ordered, and to create purchase orders for those titles. The national book wholesalers (Ingram Book Company, Baker & Taylor Company, and Brodart, Inc.) were the first to provide computer-generated purchase orders to book publishers. Publishers then paid for long hours of employee time to research these computer printouts and key them into their internal order fulfilment systems.

The fact that information (the order) was resident in one computer and required in another (at the fulfilment centre), and that enormous blocks of

time were spent and errors introduced by manual intervention in this process, frustrated some of the leaders in the industry. The result has been the development of a series of computer-to-computer communications formats standardized to meet the needs of ordering, invoicing and information transfer within the book community. Section II of this Report describes the development of these and other industry-wide systems. Section III highlights the current status of the use of these formats in the book industry.

Context of the Report

Readers of this Report should be aware that we have taken its title literally. We are concerned with the effects of the new technology on book distribution, and not with electronic transmission of information which may appear in books. The topic of 'electronic publishing' is a vast one, ranging from the preconditions for implementation of the information dissemination technologies through the more subtle implications of electronic media, including (but certainly not limited to) considerations of ownership, copyright, and the potential of creating information-poor ghettos, generations and countries.

If the future of the book is to be assured, we believe that the techniques used to distribute books must be analyzed thoroughly. The speed with which electronic technology can provide information to the reader today, and its potential impact in the future, demand that distribution methods improve if the book is to compete successfully as a viable vehicle for information, education and entertainment. We face the serious possibility that many books as we know them today may have no future if they cannot compete with electronic delivery of comparable information.

This Report is but one of the titles in the Unesco series Studies on books and reading. 'The Future of the Book: Part I--The Impact of new technologies' (Study No.8) reviewed the impact of the technology on the editorial product and commented on electronic delivery of information. 'The Future of the Book: Part II--The changing role of reading' (Study No.9) explored the ways in which technological innovation is modifying the role and function of reading in industrialized societies. Studies Nos. 2, 4, 5, 10, 12, 13, 14, 16 and 17 analyzed the state of book publishing in specific parts of the world.[1] The present study is the first in the series to concentrate on the United States.

To describe the current state of book distribution it is most appropriate to look at the context of the United States experience. Certainly, the growth of computer technology has been more rapid in the United States than anywhere else in the world. The application of computer and telecommunications technology to book distribution (and particularly to order processing) began in individual publishing companies as early as the mid-1960s. Today it pervades the fulfilment process within individual organizations.

We quickly acknowledge, however, that the United States was not the first country to apply a single, sophisticated technological approach across several

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1. A complete list of titles in this series is to be found on the inside front cover.

organizations. Book distributors in the Federal Republic of Germany were the first to establish a 'standard' electronic connection with many of their customers. That development sparked the joint Publishers and Booksellers Association project in the United Kingdom that resulted in the current British Teleordering System. Observing the success of this system, Harry Hoffman, then President of the Ingram Book Company, purchased the U.S. rights to the system and brought it to this country.

After discussion with U.S. booksellers, it became obvious that the European approach of connecting bookstores to a central data base to verify title information and to speed orders to publishers and wholesalers electronically did not meet the needs of U.S. booksellers. Hoffman and his staff were told by their bookseller customers that what was needed instead was a method of providing reliable and up-to-date information on their own sales and inventory. The large number of books stocked and sold in U.S. retailing operations, coupled with the short shelf life of most titles, made the retailers anxious for better internal information on which to base orders and returns, rather than a method of reaching their vendor more quickly and accurately. In fact, they were agreeing with Cheney's 1931 recommendation that booksellers must know what they are selling in order to gain merchandising control. This Report, therefore, reviews both the internal applications of the computer by book publishers, vendors and librarians, and industry-wide efforts to link these United States organizations.

In the U.S., a national advisory committee has been formed and consultants appointed to study the role of the book in the future and the influence that computer and video technologies may have upon books, reading and the printed word. The study is being carried out under the auspices of the Library of Congress' Center for the Book and will be presented to the U.S. Congress by December 1, 1984.

In addition to the 1931 Cheney study, there has been one other investigation into the book distribution area. In 1981, The Book Industry Study Group, Inc., a U.S. not-for-profit research organization, commissioned Arthur Andersen & Company to investigate the distribution process. The result was 'Book Distribution in the United States: Issues and Perceptions', published in 1982. The report presented many important findings, two of which are of particular relevance to this Report. One is that if distribution is to be improved, it is the publishers themselves who must take the lead. The second finding is that telecommunications technology holds the greatest potential for improved distribution in the short term, since electronic delivery of information will not present significant competition until 1990 or thereafter.

It is interesting to note that when the Book Industry Study Group was founded in 1967, leaders in their membership--book publishers, booksellers, wholesalers, librarians and book manufacturers--were surveyed to determine those areas in the industry considered to be most in need of research. Book distribution was one of the areas selected, yet it took six years before such a study was undertaken. In Section II of this Report we discuss the reason for the delay in conducting the Study Group inquiry and the specific findings of that study which relate to the new technologies.

Methodology of the Report

Section II of this Report describes the activities of individuals, companies and organizations whose efforts have brought about technological change in book

distribution in the United States. Section III analyzes each of the components of the distribution process, indicating those which have been affected by technological change as of this writing, and those for which changes can be predicted in the near future. This analysis is based primarily on information gathered in the course of SKP Associates' active participation in the formal and volunteer groups whose efforts brought about these changes.

The fourth section of the Report analyzes the preconditions required before the technology can be successfully applied to the book distribution process. To determine these preconditions, SKP Associates conducted in-depth interviews with individuals at six publishing companies, three book wholesaling organizations, one service bureau supporting the electronic order fulfilment operations of 30 book publishers, and one organization offering a turnkey computer system for order processing to the book industry (see Appendix B).

Although the number of organizations polled is not intended to be more than a sample of U.S. book distribution-related organizations, it does include those organizations at the forefront of the application of technology.

SECTION II--HISTORICAL ACHIEVEMENTS

This Section describes the various organizations that began to apply computer-based technology to the distribution process. They include the Association of American Publishers (AAP), Book Industry Systems Advisory Committee (BISAC), the Book Industry Study Group (BISG), the American Booksellers Association (ABA), the National Association of College Stores (NACS), and the American National Standards Institute (ANSI). This roughly chronological review shows the influence of each activity on subsequent ones.

Association of American Publishers (AAP)

As noted earlier, it was not until 1981 that the Book Industry Study Group initiated its study of book distribution. The reason for the delay was that BISG was awaiting the results of an inquiry into book distribution mounted earlier by the Association of American Publishers.

The AAP formed a Book Distribution Task Force in 1977. This group of experts from book publishing companies was established to study the application of computer-based technology to book distribution from a publisher's perspective. Their initial task was to determine the feasibility of establishing a data base of information about books comparable to that used to secure airline seats; that is, a central, electronically accessible source of information that would enable booksellers and librarians to locate and secure any book as easily as individuals can call any airline from anywhere in the U.S. and be assured a seat--often a specific one--on any flight.

After a two year review of existing capabilities within the publishing, wholesaling, library and bookselling communities the Task Force concluded that the development of such a data base was beyond the financial and operational capability of the AAP. Instead, they recommended that the AAP actively support the work of individual organizations attempting to apply the new technology to distribution. These efforts were already underway within and beyond the U.S. book world: the Task Force proposed that the AAP provide channels for the timely dissemination of information about these efforts to its publisher members. The Task Force also recommended that the AAP become the voice of book publishers in forums where such developments were underway, such as in the Network Advisory Committee to the Library of Congress, where national bibliographic data (and now full text) communication possibilities and policies are being explored and formulated. These activities continue today under the name 'AAP Book Distribution Project,' which is currently attempting to determine the specific order, cycle time elements and procedures that might reduce that time, in the bookstore, publisher and shipping components of the distribution process.

Book Industry Study Group (BISG)

The AAP's decision to provide informational support to the publishing industry cleared the way for the Book Industry Study Group to proceed with an effort to research the complex book distribution area. It soon became obvious to the BISG committee charged with developing research parameters that everyone involved in the distribution process considered it generally inefficient, but few

had concrete ideas about how to improve it. Arthur Andersen & Company therefore proposed that they research the area to establish an industry-wide consensus of the problems and potential solutions. Andersen applied the 'delphi technique' to seek consensus within the industry's distinct groups--publishers, retailers, wholesalers, librarians and book manufacturers.

Two of the most important findings in Andersen's report, 'Book Distribution in the United States', have already been indicated. The first was that if distribution is to improve in the U.S., it is the publishers who will cause it to do so. At least 80% of the panels polled on this question place the responsibility for future improvement on both trade and mass market publishers (p. 3.6). However, the chances of the publishers actually doing so was rated only poor to fair by most of the panelists (p.3.8). The second finding was that electronic dissemination of information will not seriously affect distribution until 1990 (p.5.37).

A third finding of major significance to this Report is that standardization is extremely important and that its effects will be seen as early as 1985. The potential beneficial impact of standardization was rated nearly as high as that attributable to telecommunications (p.3.14 and 3.10). Panelists believed that while the International Standard Book Number (ISBN) will be generally accepted by 1985, other forms of standardization (such as the standard identification number for organizations in the book industry) will not be widely accepted until 1990 (p. 4.47).

A BISG Distribution Committee continues to explore methods of extrapolating from these results to produce actual changes in distribution practices. They initiated and supported an investigation by Richard Hunt, New York University's 1983 Oscar Dystal Fellowship winner, into two areas in which publishers and booksellers had conflicting opinions in the original Study. Booksellers had suggested that net pricing and self-remaindering would reduce distribution problems; publishers disagreed. However, when Hunt interviewed 36 publishers, he found them 'both eager for and receptive to any new idea that might benefit and streamline the (distribution) system which exists today.' Publisher responses to Hunt's questions were reported in the January 20, 1984 issue of Publishers Weekly, p.42-44.

Another inquiry sparked by this Study is the AAP Book Distribution Project's on-going research into distribution cycle time (see Page 11 of this Report).

Book Industry Systems Advisory Committee (BISAC)

In September, 1974, DeWitt C. Baker, then newly appointed President of the Baker & Taylor Company, brought representatives from all parts of the book industry together to discuss the distribution efficiencies which might result from increased use of the International Standard Book Number (ISBN). That meeting spawned two ad-hoc committees of publishers, wholesalers, large book retailing chains and OCLC (then the Ohio College Library Center, now the Online Computer Library Center in Dublin, Ohio), the data base supplier of book information to libraries. The ISBN Publicity Committee attempted to publicize the benefits of the proper use of the ISBN in book distribution by all components of the industry. The ISBN Data Transmission Committee accepted the charge of developing computer-to-computer formats and protocols for the transmission of orders and invoices between purchasers and sellers of books.

We believe that the willingness of the members of the ISBN Data Transmission Committee to accept this goal, and to donate the many years of effort that have subsequently been invested in it, was both a good business decision and a reflection of the size and nature of the book industry itself. Although there are many companies active in the field, most of them are quite small, so that the larger companies do, in fact, represent the majority of the business transactions in the industry. The Committee was comprised primarily of individuals from these larger organizations, the ones that could benefit most from the elimination of manual input of computer-generated documents from their suppliers or customers, and from the elimination of errors such manual input created. Another impetus for their willingness came from their awareness that retailers in larger industries, such as Sears and J.C. Penney, were beginning to create electronic orders in unique formats and requiring their suppliers to accept orders in those formats. Rather than face the expense of programming their computers to accept multiple company-specific formats, these large book publishers, wholesalers and retailers decided that it made economic sense to create one format that everyone could programme just once to communicate with any organization in the industry.

They also realized that the small total dollar volume of the industry meant that no wealthy national organization, such as the Transportation Data Co-ordinating Committee, which developed such formats for its industry, would be willing to commit large amounts of research and development funding for the book industry.

BISAC Computer Tape Formats. The ISBN Data Transmission Committee began its work by concentrating on a standardized format for computer tape orders. They believed that once orders were successfully processed using this format, telecommunication protocols and invoice formats could be addressed. In the fall of 1975 the first order tape was sent from B. Dalton Bookseller to Random House. Since that time, the tape order format has been corrected and improved. It is currently in its third version.

By 1977 the ISBN Publicity Committee found it had accomplished its immediate objectives: the ISBN was appearing on many more orders, in book review columns, and on promotional materials supplied by publishers. Publisher printing of erroneous ISBNs and the re-use of numbers previously assigned to out-of-print titles had all but disappeared. The Publicity Committee found itself promoting use of the computer order format developed by the Data Transmission Committee. Therefore, the two ad-hoc committees merged, taking the name Book Industry Systems Advisory Committee, BISAC. In 1980 BISAC became a standing committee of the Book Industry Study Group, in order to benefit from BISG's office facilities and legal advice. Today there are 248 subscribers who pay to receive copies of the bi-monthly BISAC meeting minutes, of whom 50 individuals are actively involved in BISAC's work.

In addition to the order format, BISAC has approved an invoice format (currently in its second version), which is produced by over 40 of the 70+ publishers who are capable of accepting and processing orders in the BISAC format. A third BISAC format enables any publisher to electronically advise a customer of changes in basic information about titles--price changes, new titles, those declared out-of-print, changes in publication dates, etc. This 'Title Status' format is produced by over 25 U.S. publishers.

Telecommunication. BISAC's original decision to develop a computer tape format produced sufficient cost savings for those using it, so that no incentive existed for some time to develop an industry-wide telecommunications format. However, the recent development of electronic acquisition systems by OCLC, other network organizations, and turnkey system vendors to the library community provided that incentive. In 1983 BISAC approved its third attempt at a telecommunication format for orders, which is currently being programmed by various organizations in the library community. Both current BISAC order formats (computer tape and telecommunication) are under development as a single American National Standard.

Machine-Readable Coding. In the mid-1970s, BISAC was asked by the British Working Party on Machine-Readable Coding (a committee of booksellers, publishers, librarians, and manufacturers) to determine the coding method appropriate for U.S. books in the U.S. marketplace. They did not want to select a coding technique for the U.K. that would be in conflict with that which would come into use in the United States. After review of the two coding systems in use in the U.S. --bar codes and Optical Character Recognition (OCR), font A--BISAC recommended that books carrying the ISBN in OCR-A would most likely meet the needs of both bookstores and department stores. Today all mass market paperback publishers and many hardback publishers have begun printing such codes on the back covers and jacket flaps of their books. However, the predicted expansion in the use of this technology by department stores, which was expected to reduce the cost of hardware and improve this technology, has not taken place.

Bar coding, and specifically the Universal Product Code (UPC), is used on books in the U.S. distributed to non-traditional book outlets such as grocery, drug and convenience stores. The independent distributors of magazines and mass market paperback books to this market place requested and received approval for a version of the UPC which indicates only the cover price of the book within the basic symbology. Additional bars, not read by supermarkets, are scanned by these distributors to determine the title-specific information they require, but which is changed too frequently to be of value to their supermarket customers, who neither purchase nor record the sales of books by title.

The British Working Party developed a dual coding system for the U.K., which has been adopted elsewhere in Europe. It calls for the printing of the ISBN in OCR-A or OCR-B, along with the ISBN represented in the UPC-equivalent, the EAN (formerly European, now International Article Number). Because the EAN is intended to be country-specific, special permission was sought and granted for the assignment of code 978 to the 'country' called Bookland. Thus, the EAN of 978 followed by an ISBN is known as the 'Bookland EAN.' The British retail book trade is in the process of implementing EAN scanning at point of sale; the U.S. retail book trade has put very few scanners in place.

The Machine-Readable Coding Subcommittee of BISAC is currently reviewing BISAC's original coding symbology decision, in the hope of finding a solution that will meet the needs of U.S. and foreign publishers, retailers and distributors.

American Booksellers Association (ABA)

As noted in the Introduction, the attempt by Harry Hoffman to import the British Teleordering System was unacceptable to the United States bookselling community because of their other needs. The rejection of this concept was reinforced by booksellers and librarians in 1978, when the R.R. Bowker Company

developed and considered implementing a teleordering system in the U.S. called Book Acquisition System (BAS). Bowker found that stores and libraries were unwilling to pay for a service whose principal advantage was to increase the speed with which their order would reach suppliers' inefficient distribution systems. The alternative of funding the system by charging publishers for receipt of the order was not considered viable, we understand, by many in the industry and the concept was 'shelved.'

In 1982, G. Roysce Smith, then Executive Director of the American Booksellers Association, proposed a seemingly similar concept, but one with expanded capabilities and purpose. In addition to transmitting orders from booksellers to publishers and wholesalers electronically, the system would combine the orders from individual booksellers, thereby maximizing the discount achieved by each bookseller while reducing their paperwork burden. In addition, the system would work in conjunction with a freight consolidator to expedite and reduce the cost of shipping.

This concept is now known as the Booksellers Order Service (BOS). A test of the system began in February, 1984, with 25 booksellers of different types, sizes, computer sophistication and geographical location placing orders through BOS for the publications of CBS/Holt, Macmillan, St. Martin's Press, Scholastic, and New American Library. BOS requires that booksellers own a computer terminal, which is still considered revolutionary by many of them. Therefore, BOS is offering participating booksellers a computer, pre-programmed with simplified input protocols. Through their computer terminal booksellers send orders and requests for credit to BOS' centralized computer and receive confirmation and information on new titles, author appearances, books back in stock after re-printing, and other data supplied by vendors. BOS' centralized computer delivers either electronic orders in the BISAC format or paper orders to publisher and wholesaler vendors. BOS is billed (in the BISAC format) for all purchases made through the system, then re-bills the participating bookstores.

The projected schedule calls for full availability of the system to all ABA members in July, 1984, with an anticipated cost to each bookseller of $150 per month, $80 of which represents the twenty-six month lease/purchase of the BOS computer terminal, modem and printer. It is expected that 500 booksellers will be placing orders through BOS by 1985 and 1,000 will do so in 1986. The number of vendors is expected to grow to 25 upon implementation and to 100 by 1986.

Future plans for BOS call for on-line inquiry by booksellers, the automatic transfer of orders to a second vendor when the vendor of first choice is out of stock, the placement of gift book orders in one store for delivery by a store closer to the recipient (a service similar to the 'FTD' system for delivery of flowers as a gift), the use of in-store equipment to sell microcomputer hardware and software, and other industry-wide programmes.

In the meantime, Bowker revived its original BAS order-forwarding project in conjunction with their current offering of on-line access to their extensive Books in Print data base. BAS is also scheduled for implementation in the summer of 1984, charging booksellers and librarians by the number of titles ordered, and offering electronic orders to vendors at a fee. We believe that BAS will not be competing with BOS for bookstore order forwarding, but might be competing with library networks and turnkey systems that offer comparable services and similar pricing structures.

National Association of College Stores (NACS)

Another electronic ordering service has been announced, although it is still in the specification stage. The National Association of College Stores is planning

to provide on-line ordering capability to its member stores. NACSNET, as their planned network is called, will provide communication between the stores, the NACS office, NASCORP (their wholesaling subsidiary), and each other. NACSNET ordering capability may encompass the purchase of new books and used textbooks, as well as other non-book merchandise sold by these stores. NACS is hoping to arrange a link to the BOS system for handling orders for new books, while establishing their own data base of information about used textbooks available in or desired by their member stores. They may also consider linking their network to vendors of non-book merchandise for information and/or ordering purposes.

American National Standards Institute (ANSI)

The ISBN is an international and national standard (ANSI Z39.21) approved by ANSI in 1973 and revised and reapproved in 1980. The Standard Address Number (SAN) (ANSI Z39.43) was approved by ANSI in 1980. Both of these distribution-related--as well as 38 other--standards were developed by the National Information Standards Organization (Z39), which is responsible for standards development in the areas of Library and Information Science and Related Publishing Practices. They are also undertaking the national standardization of the BISAC order formats.

Another group functioning under the ANSI guidelines is developing computer-to-computer protocols for the distribution process. American National Standards Committee X12 (Business Data Interchange) has produced ANSI standard ordering and invoicing formats that can be used by all types of businesses and is in the process of developing other applications relating to the purchasing/distribution/payment cycle. Book industry interests in their activities have been and are being coordinated through the experts on BISAC. It is expected that utilization of the formats over time by a growing number of organizations will lead, as was true of the BISAC formats, to improvements in the formats and greater use of them throughout the U.S. business community.

SECTION III--THE DISTRIBUTION PROCESS

In this Section we analyze the various component steps in the distribution chain and the organizations involved in them. Highlighted are those areas which have already experienced change due to technological advances and those where such changes can confidently be predicted to occur in the near future.

The Purchasing Decision

Although there are those within the editorial and marketing departments of book publishing houses who would claim to start the distribution cycle by procuring and publicizing products that are appropriate to the needs of the market, we consider the distribution cycle to be separate from the publication process itself. Distribution, we contend, begins with the awareness by a potential purchaser that a book exists.

Traditionally, book publishers use such techniques as direct mail, in-person selling and attempts to achieve review attention to make their wholesale, library and retail customers aware of their new products, while providing few reminders of the existence of backlist books. New books are normally 'presented' only once, while backlist title information must be searched for in catalogues and such reference works as Books in Print. Direct mail publications are promoted to the ultimate consumer, but books sold to intermediaries such as bookstores and libraries are generally not brought to the attention of the consumer by the publisher; this is left to the bookseller and librarian. Only the most popular titles are publicized through such means as their appearance on 'best seller' lists and through the limited, concurrent advertising publishers create for those same titles. Readers seeking the 'serious' books which do not appear on these lists, normally rely on the information provided by abstracting and indexing services, which is increasingly available through on-line terminals.

One of the greatest potential impacts of the new technology is its ability to offer publishers, booksellers and librarians the opportunity to provide information about new and backlist titles to the general public in their homes and offices. One example of this was the offering to view and purchase from a best seller list which B. Dalton provided in the Viewtron videotex experiment in Coral Gables, Florida. The use of videotex, teletex and 'narrow casting' programmes on cable television should provide the U.S. book readers-- and possibly some who rarely read today--with information about the existence of specific titles and create a new demand for books.

Full bibliographic information about each new U.S. title has been encoded in machine-readable form at the Library of Congress starting with a pilot project in 1966 and actual production in March, 1969. This information is distributed by LC on their Machine Readable Cataloguing (MARC) tapes. Over 2,000 of the 30,000 or so public, academic, special and school libraries in the U.S. have access to the data bases of this information offered by the three major U.S. bibliographic networks (OCLC, the Research Library Information Network, and the Washington Library Network), and Canada's University of Toronto Library Automation System. However, this information is used less to provide awareness of the existence of a work than to support the processing of books once the acquisition decision has been reached.

The growing use of automated circulation systems may also affect acquisition decisions. Books which have a high circulation level can be easily identified

through these systems. Learning more about what the library's publics are borrowing could influence future selection decisions.

Once librarians and booksellers are aware of the existence of a title and decide to purchase it, they are offered sophisticated searching techniques to locate books in the ever-growing number of data bases in the U.S. provided on-line and through 800 (cost free) telephone systems. Such data bases include those of Bowker (Books in Print) and the national wholesalers. In addition, micro-fiche programmes are sponsored by Ingram Book Company, Baker & Taylor, NASCORP, the AAP, and others to identify books available at publisher or wholesaler ware-houses. It should be noted that BOS, Ingram and the AAP rely on the BISAC Title Status format for monthly updating information from book publishers.

After booksellers have purchased a title once, decisions to buy additional copies are based on their need to augment their existing supply. Today, the vast majority of booksellers in the U.S. have no computer-based information about their sales and inventory. They 'eyeball' various sections of their stores regu-larly--particularly the fast moving 'best seller' areas--to spot titles which are selling well, but rely on physical inventories to learn whether they have little or no stock of a less popular work. The computer is an appropriate tool to main-tain such records, and several relatively expensive sales and inventory systems are now offered to booksellers. However, only slightly more than 100 of the inde-pendent bookstores (along with the 677 B. Dalton and 827 Waldenbooks stores) out of the estimated 15,000 bookstores in the U.S. have purchased such systems. Cer-tainly this is one area in which the decreasing cost of the technology will make an important difference in the distribution process. According to the Andersen study, the availability of better sales and inventory knowledge will result in smaller, more frequent orders to maximize dollar investment while minimizing stock outs.

We also expect to see the use of sales data captured at the point of sale--one hopes through the scanning of machine-readable coding on books into bookstore computer-based systems--providing better information to the entire book community. At present, best seller lists are based on reports from a sample of 'representa-tive' stores and distributors. If accurate sales data at the retail level could be transmitted to a centralized computer, regional and national lists of books that are selling well could provide another method of alerting booksellers to the sales potential of given titles.

Of equal importance, title-specific sales rates could provide publishers with money-saving information on which to base their reprinting quantities, warehouse layout, financial planning, and other decisions on which accurate sales information provided on a timely basis is critical. Today publishers base their decision on whether to reprint a 'fast moving' title on best seller lists, on daily or weekly reports of their own sales, on records of orders received and not shipped, and, sometimes, on calls to selected independent stores, chains and wholesalers. A central data base of accurate, timely sales information could provide publishers with the information Cheney noted that they need to make more valid reprint deci-sions. However, in the Andersen study, the various segments of the industry were uncertain as to how such a plan could be implemented. Most segments generally believed that publishers should control such a system, but a large percentage (66%) of the booksellers polled by Andersen failed to respond to this question; those who did favoured an outside agency, rather than the publishers themselves. The A.C. Nielsen organization once considered using their point-of-sale polling tech-niques for this purpose but pulled back after a corporate reorganization.

Placing an Order

Once the decision to buy has been made and the vendor selected, the order must be placed. This is the area in which we have recently seen the greatest effect of the new technology. Small booksellers' orders can be placed on-line through BOS, BAS and, someday soon, NACSNET. Large book chains can use the BISAC tape order format to reach over 70 publishers and all of the major national wholesalers. Many publishers have toll free telephone numbers so bookstores can place their orders over the telephone. Libraries with links to the bibliographic networks or with internal automated acquisition systems can create orders which now reach vendors in BISAC's computer tape format and shortly will be transmitted to those accepting such transmissions in one of the American National Standard communication formats.

The major change we can anticipate in this area is an increased use of telecommunications to replace computer tape ordering. If the divestment of its subsidiary companies by American Telephone and Telegraph results in the anticipated offering of new, competitive, low-cost systems, communication costs could be as low as sending tape through the mails or via private carriers. As technology continues to increase the processing speed and flexibility of larger computers, on-line access to search for titles and reserve them for specific customer orders should increase.

Developments are already being seen in electronic communication of orders. For example, the Baker & Taylor Company, the largest U.S. library wholesaler, is communicating on-line with over 1,000 libraries across the country through a specially-programmed hand-held electronic device known as a 'Bataphone.' The library dials Baker & Taylor through a local network, plugs the Bataphone into the telephone, and enters quantity and ISBN. Orders can be created for under $.02 a title. Baker & Taylor is currently developing the software to handle bookstores orders, with implementation anticipated in 1985. Some publishers are also considering providing their sales force with hand-held portable terminals which can be plugged into a telephone to transmit orders from a bookstore, while providing a printed copy of the order for the customer.

Internal Order Processing at Vendor Locations

This is the other major area in which the new technology is currently employed and enhancements can be predicted in the near future. As indicated in the Introduction, most large publishers and all of the national wholesalers now use automated technology for the processing of orders, either in on-site computer systems or through service bureaux. These systems usually contain a file of all customers with whom they do business, including credit controls, sales representatives to be credited for purchases by the customer, a link between billing and shipping addresses of the same organization and other indicative information. They also contain a file of all titles published, including inventory status, sales history and other additional specific data. Order processing clerks identify the customer and the titles requested, input specific instructions on the order which are not maintained by or in conflict with that on the computer, and send the order through for processing.

Computer systems automatically reduce inventory or hold orders for unavailable titles for future shipment, create the picking documents necessary to locate the titles requested in the warehouse, create invoices for the customer, and add this sale to others in the vendor's accounts receivable and sales files. Most computerized fulfilment systems in the book industry are 'pre-billing' systems, creating all paperwork and records in one transaction. A few publishers use 'post-

billing systems, which deduct shipments from inventory in the first pass through the computer, but add postage and create receivables and other records in a second pass.

As was also noted, many of these order fulfilment systems were created by individuals with less than full understanding of the book industry's distribution system, and also to optimize the capabilities of computer hardware and software that are considered archaic in light of today's technology. Large publishers and book wholesaling organizations whose internal computer systems are bound by these restrictions have begun upgrading or completely revamping their systems. In 1981, of 65 publisher responses to a survey conducted by the AAP Book Distribution Task Force, 57% indicated that they were changing their computer-based order fulfilment system in some way. More than half (54%) of those were planning to replace their existing computer with an upgraded model. Smaller organizations that have never had computer systems can now afford to purchase them, due to the reduced cost and increased capability provided by mini and microcomputers and the entry of several new organizations into the turnkey and service bureau fulfilment systems marketplaces.

Another result of the technology will be the increased utilization of industry standards. Computers require unique identifiers of information sought. The shorter the identifier, the more efficient the computer system. The ten digit ISBN has become the basis for the BISAC formats because of its ability to identify a specific binding of a specific title. The seven digit SAN is increasingly being used by members of the U.S. book community as they profit by the speed with which it uniquely identifies the address(es) to which the books ordered are to be shipped and the related invoice sent.

As the number of computers in use grows, the availability of the ISBN, SAN, and standard formats for tape and on-line communication of orders, and the growing sophistication of computer-based ordering systems will continue to reduce speed and increase accuracy in the processing of book orders.

Picking, Packing and Shipping Books

Automated technology has had the least impact on these labour-intensive processes. Some sophisticated computer systems enable suppliers to arrange their storage areas by actual rate of sale, thus making the high demand titles easily accessible to warehouse employees. However, even today book vendors rely on the eyes of their employees to find the correct storage location; pull the book shown on a picking list from the sheif, bin or carton; pack the books into cardboard cartons; and ship these heavy, dense, cartons across the large expanse of the country, as well as internationally.

Book printers and binderies also play a role in the physical distribution of books in this country. Located throughout the U.S. they usually distribute the first printing of mass market paperbacks, and frequently perform distribution services for publishers too small to warehouse their own books or for those whose warehouses are too full to handle yet another new title.

The Andersen study questioned the role of binderies as regional fulfilment centres for the publishing industry and found that only these organizations themselves saw this as an appropriate role. Both traditional and mass market publishers strongly opposed the idea, primarily because they felt that frontlist and

backlist titles must be stocked in the same location, and because they doubted the binderies'/manufacturers' ability to handle all fulfilment services (p.5.28, 5.29).

With the limited number of regional warehouses now in existence in the book trade, much of the delay, expense and damage in physical distribution is introduced by the carriers of product from point to point. The United States Postal Service (USPS) has a poor reputation for its care and handling of packages and books are no exception. Nor will the USPS provide proof of delivery when purchasers do not receive what vendors claim to have shipped. However, it does reach every location in this geographically dispersed nation within a reasonable period of time and at reasonable costs.

The primary competitor to the USPS has been the United Parcel Service (UPS). Their ability to supply proof of delivery often offsets their higher rates, and makes them a prime conveyor of books to points of population density which are geographically close to the shipping location. However, they normally hold dense cartons of books aside for trucks not carrying breakable items, so that it often takes them as long as the postal service to reach out-lying areas of the country. In 1983 a new organization was founded to solve this problem by shipping only books. Called ZIPSAN, it existed for about seven months, gaining the complete support of a few publishers, but with most sending through only small, 'test' shipments. When ZIPSAN's lack of capital forced its closure at the end of 1983, UPS remained the only viable alternative for the shipment of small orders for book distributors without their own fleet of trucks.

One proposed application of the new technology may significantly modify this highly inefficient aspect of the book distribution process. The scenario for a completely new form of book distribution could be as follows:

1) Authors transmit their manuscripts electronically to publishers, where they are edited and converted into 'type' through computer composition;

2) Those computerized words are stored inexpensively on tape, disc, or some other electronically accessible medium;

3) The availability of the book is communicated via reviews and various types of bibliographic, abstracting, and advertising information provided on data bases accessed in the home, library, bookstore and business;

4) Book readers decide to purchase or borrow books from these informational sources, without seeing a printed copy;

5) Stored type is accessed and telecommunicated inexpensively to a printing site anywhere in the world that is closest to the book reader; and

6) High speed, low cost printers duplicate the stored type within a reasonable amount of time.

Thus, instead of printing, warehousing and shipping books, with the inherent potential loss in investment through damage, pilferage, and/or lack of market potential--as well as the very high shipping costs between manufacturer and warehouse and then warehouse and purchaser--access to stored composition which would then be printed 'on demand' would provide the purchaser with a printed book.

The question of quickly binding those printed pages into a 'book' as we know it today is not resolved in this scenario nor by today's technology. Nor do we presently have the ability to create, store and reproduce fine or multicolour graphics. However, these are areas undergoing research and development by publishers, book manufacturers and computer technologists. We predict that the on-site, on demand printing of at least certain types or parts of books may replace today's warehousing and shipping in the foreseeable future.

Receiving and Processing Books

To the extent that books are purchased through automated ordering systems, those computers contain records of books on order. Opening a carton, checking in the books, determining if those received are, in fact, the books ordered, and deciding where they are to be shelved or sent is greatly facilitated by such computer-based systems. The proliferation of such systems will extend the benefit of this technology to an ever-increasing segment of the book world.

Another improvement that could be provided by the new technology is scanning of machine-readable coding on cartons or books themselves. This is used to some extent at present, but the ongoing controversy about the appropriate symbology to be used in the book industry has led to the under-utilization of this technology. We await more investigation of coding technology by BISAC and the development of a library item standard by the National Information Standards Organization (Z39) before this technology can be fully exploited in bookstores, libraries and at the receiving docks of publisher and wholesaler warehouses.

The processing of books by libraries, however, has been greatly facilitated by today's technology. Through the provision of Cataloguing in Publication (CIP) data on Library of Congress MARC tapes sent to bibliographic networks, wholesalers and large libraries, catalogue cards can be ordered for arrival at the same time as--or before--the book itself. Gone are the days when newly acquired books sat for months awaiting the availability of cataloguers to make them shelf-ready and available for the public.

Generating Claims

Today's automated library acquisition systems notify purchasers when books that have been ordered are not received by the expected date. In addition, some of these systems automatically create claim forms which the library can send (in the mail today, but electronically in the future) to the vendor requesting information on the status of the titles ordered.

It is our guess that the improved information flow between buyer and seller inherent in interactive on-line ordering and confirmation systems may eliminate most of the claiming activity experienced in library book ordering today.

Returns Processing

The processing of returns (and their eventual re-appearance in the book trade as 'remainders')--including the shipping costs between bookseller and publisher, publisher and remainder dealer, and then remainder dealer and bookseller--reflects a unique aspect of book publishing compared with other businesses offering goods for sale. Most publishers accept full returns on most titles they publish, on the tacit assumption that the lack of sale is due to their unreasonable expectations of a title's potential.

As noted earlier, computerized bookstore sales and inventory systems not only highlight what is selling, but pinpoint inventory that should be returned to the publisher for lack of sale. Since some U.S. publishers now limit the time during which unsold books can be returned, the most sophisticated bookstore systems interface the publisher's returns policy limitations with the sales rate to suggest the return of merchandise before that privilege is cancelled or penalized.

The processing of returns in publisher warehouses can be greatly expedited by scanning, which we anticipate will become wide-spread once standardization has been completed. RCA Records recently announced that they saved approximately $500,000 per year through the introduction of scanning in their returns processing area. However, the elimination of this practice through the self-remaindering of books by U.S. booksellers would provide even greater cost reductions. The creation of the BOS network connecting booksellers in the U.S. may be the first step in this process. But before any significant progress can be made, booksellers and their publisher vendors must agree to the policies and procedures under which credit is given for books sold as 'remainders' in the stores, without their going back to the publishing house at all. The new technology is certain to play an important role in this process. The Hunt report in Publishers Weekly provides us with hope that this may come to pass in the foreseeable future.

Invoicing and Payment Processing

As was true of order creation and transmittal, this is an area in which we have seen great improvement through the use of BISAC formats. It has been estimated by J.C. Penney that they save between 5 and 6 cents per invoice by receiving machine-readable tapes instead of paper copies. Anticipating comparable savings, B. Dalton's representative to BIS chaired the sub-committee that developed the first BISAC invoice format. He spearheaded its acceptance in the book publishing community by offering Dalton orders in the BISAC format immediately, in return for a promise of BISAC format publisher invoices some time in the future.

Once payment is received at the vendor's offices, clerical staff apply it to the open accounts receivable balance for the appropriate customer. Errors in locating the correct customer will be eliminated by the use of SAN once that standard has been implemented. Most sophisticated computerized receivables systems allow the operator to search for the correct customer on-line. Since the book industry traditionally functions with an 'open item,' rather than a 'balance forward' method of maintaining accounts receivable, the computer is valuable in displaying and calculating the value of the variety of credit and debit transactions that are to be offset by the monies received. In many computer systems, on-line cash application has eliminated the delays inherent in the older, daily batch processing routines.

Today some U.S. banks offer computer tape information to their customers about checks received in lock boxes and the invoices that are paid by those checks. The next step in this process in which we expect to see beneficial effects of technology will be the use of electronic funds transfer. With the development of a standardized electronic funds transfer format, monies, as well as the information from customers, can be moved into the vendor's bank account and computerized accounts receivable system.

Warehousing Functions

Although not a part of the cycle represented earlier in this Section, the functions that are required to maintain books in warehouses are also important to

the distribution process. On-line computer systems in place in a growing number of large publishing houses have had a great impact on warehousing operations. Computer terminals located at receiving docks provide direction for the placement of incoming stock. Terminals in other locations provide stock status information upon inquiry. With data communications in place, a company's warehouse locations throughout the U.S. are connected to each other, inventory levels can be determined instantaneously, and new stock can be allocated to the appropriate warehouse most efficiently.

Another area that has seen change is inventory taking. There is nothing more arduous, dull and expensive than closing down a warehouse in order to count the number of copies of each book on the shelves. Complex computer-based cyclical inventory systems have been developed by some publishers that allow for the counting of books in specific sections of the warehouse and reconciliation of those counts through computer inventory records without stopping the processing of orders or shipment of books. We expect to see more such systems in the future. In addition, we anticipate the acceptance of an industry-wide machine-readable coding standard that will result in the ability to carry a small hand-held scanner through the warehouse and 'count' the copies or cartons in a much more accurate and timely manner than is currently possible through eyes, hands, pens and pencils.

The other function that will be influenced by technology is the location and picking of stock. Today, automated location systems can send computer controlled trucks to the appropriate location of books to be pulled from the shelves. With some standardization in the size of books or the ordering of books in carton quantities which is being promoted by some publishers, the type of industrial automation (robotics) we now find in factory production lines could be applied to the picking and packing of books.

This is an area that requires research and development funding of a size and scope beyond the capability of most book publishers. However, a concerted industry-wide effort supported by publishers, book manufacturers, and those in other industries with a large number of short-lived products--such as the recording industry--might result in the funding necessary to develop such technology within a reasonable time frame.

SECTION IV--PRECONDITIONS FOR THE INTRODUCTION OF NEW TECHNOLOGY

To fully appreciate the preconditions necessary for the successful introduction of new technology to the distribution process in the United States, one must understand the various types of organizations which participate in the process and the role they have had in applying technology to book distribution. One must also appreciate the fact that automation was unacceptable to many in the industry for a long period of time. Leadership by the few with a vision for the future has laid the appropriate foundation for the industry. Today's low-cost computer systems, combined with the popularity of microcomputer technology in the U.S., have built on that foundation to create conditions which will allow much greater successful application of the new technology in the future.

The Participants

Libraries were the first component of the distribution chain to embrace and utilize the new technology. Originally formed as a consortium of academic libraries in the state of Ohio, OCLC grew from a dream to a reality with over 2,000 libraries now using computer terminals to telecommunicate with the OCLC computers in Dublin, Ohio. However, of all of the functions required to sustain and improve library service, the distribution-related activity, acquisition, was a low priority for automation. It is only in the past few years that we have begun to see automated acquisition systems and a larger number of libraries beginning to experience the influence of this automation on their distribution systems.

It must also be noted that the U.S. does not have one national library. The National Library of Medicine, National Agricultural Library and the Library of Congress have each had an important but different role in the implementation of automation in this country. Of the three, the Library of Congress has had the most distinct role in distribution, through its Cataloguing in Publication Project, its MARC tape dissemination, the catalytic role of its Network Advisory Committee in bringing book vendors and librarians together to study the new technologies, and its Centre for the Book, which has brought thoughtful, dedicated book people together to share problems and progress and to develop projects of important to the introduction of new technology, such as the study of the role of the book in the future.

Book wholesalers and jobbers have also played an important role in U.S. technological evolution. As entrepreneurs whose companies survive or fail as a result of their distribution capabilities, book wholesalers have the most to gain through innovation in book distribution. It was the Ingram Book Company which started the concept of customers dialling an 800 telephone number and talking with someone who had on-line access to the stock availability of all of the titles in their warehouse. The telephone clerks not only advised customers of availability, but could 'reserve' copies for a specific customer if asked to do so. Today these same services are offered by other wholesalers such as NASCORP and the Baker & Taylor Company, and by some publishers. Ingram was also the first company to introduce a monthly microfiche listing of their inventory to make locating books and their suppliers easier for bookstores and libraries. Other wholesalers and bookstore chains have followed suit.

Publishers were among the first components in the distribution chain to automate their order processing functions, warehouses, and other fulfilment areas. And without the support of its publishing members, BISAC would have made little progress.

The U.S. Government

Earlier Sections of this Report omit, for the most part, reference to the role of the government in book distribution in this country. This is a valid omission. Some Americans might envy their Canadian counterparts who can call on their national government for support of a centralized 'Telebook Agency' to build data bases, produce and distribute microfiche and invest in teleordering systems- or the Dutch and the British, where publishers and booksellers can get together legally and jointly invest energies and monies in new projects meant to improve distribution for all.

U.S. policy has called for a complete separation of government from publishing as a constitutional protection of free speech. An extreme example of this policy is the a priori refusal of the government-supported Small Business Administration to provide funding under its loan programme to small businesses which publish books.

The one area of distribution in which government influence has been more positive is in the United States Postal Service rate structure. During Franklin D. Roosevelt's administration it was determined that books carry important educational matter and should be subject to lower postal tariffs than those imposed on other written materials. That was the start of the 'Special Rate Fourth Class-Books,' which still exists, although the gap between this 'special rate' and normal postal rates narrows at each USPS rate review. In 1970 the USPS introduced a 'library rate' and in 1976 an 'educational and non-profit institutional rate' to help libraries and schools reduce the cost of materials they purchase. Those rates too have become less 'special' over time.

Leadership

It is our belief that there are many methods of gaining an objective such as the application of the new technology to the distribution process. However, success demands leadership from innovative individuals within organizations willing to invest in their efforts.

One such leader is DeWitt C. Baker, who must be credited for creating what has become BISAC. The BISAC participants, through their ability to compromise and to foresee a long term objective of sufficient benefit to justify hours of unpaid labour, have provided the U.S. book industry with the basic tools that give small and large publishers and their customers the capability of taking advantage of today's technology.

In the bookselling area we must acknowledge G. Roysce Smith's vision and leadership in establishing the system known as BOS. If that experiment succeeds, booksellers will not only have previously unknown distribution advantages, but also familiarity with computer-based technology that will, we believe, encourage them to sell computer software, and, possibly, computer hardware and access to information on data bases. It will certainly better prepare them for the 'publishing on demand' scenario described earlier in this Report.

Harry Hoffman, now president of Waldenbooks, and the current management of the Ingram Book Company have introduced innovative technological changes now found in the systems of its competitors and in other organizations in the U.S. and around the world.

Finally, the Association of American Publishers has been influential in bringing international innovations to the U.S. book industry and American ideas to the

book industries of other countries. In 1978 the AAP's Book Distribution Task Force invited individuals involved in European distribution technology to a meeting in conjunction with the Frankfurt Book Fair. These participants described their individual systems and established an enduring rapport with their American counterparts and with each other. This group has expanded to become truly international and calls itself 'International Distribution Specialists.' Still meeting in conjunction with the Fair, they provide each other with an annual update and preview of new innovations in the distribution systems in the U.S., U.K., Federal Republic of Germany, Holland, Finland, Canada, Spain and other countries. Hans Jurgen Ehlers of Ernst Klett, Stuttgart (Federal Republic of Germany) and Julian Blackwell of the Blackwell Group (U.K.) were among the original planners and are still involved in these annual meetings, with year-to-year planning, invitations and reporting handled by the publishers' associations of various countries.

Historical Preconditions for Automation

In the 1950s, the largest U.S. publishers were using rented IBM 'machine accounting equipment' for order processing and accounts receivable. With the advent of main frame computer technology in the early 1960s, these companies saw a means of reducing the growing personnel expense incurred because of expanding sales volume by installing their own computer systems. The application that justified the purchase of all publishers' first computers was order processing; it was clear that the computer could process orders more efficiently than an ever-increasing clerical staff.

Due to IBM's dominance of the marketplace at that time, most companies starting to automate purchased IBM equipment; this continues today in the publishing industry. The first data processing managers hired came from outside the publishing industry, i.e. from industries such as insurance, shipping, pharmaceuticals, and meat packing, where automation had taken hold more quickly.

Through the 1970s and 1980s, those companies which had installed computers earlier continued to upgrade their systems in response to expanding sales, changing business requirements, and new capabilities offered by the technology. There are far more choices available to a company automating today than ever before, ranging from main frames and powerful minicomputers to microcomputers. No longer is it only the company doing sales of over $20 million that can cost-justify a computer system, as prices range from $1.5 million for main frames down to $5,000 for microcomputers. While hardware costs have come down significantly, off-the-shelf software designed particularly for this industry is still not available. Costs for customized software and internal systems development are still high and are increasing.

A typical turnkey minicomputer system for book publishing sells for between $75,000 and $100,000 but can reach as high as $200,000, depending on hardware and storage capabilities. Such systems are capable of doing the job a $1+ million main frame did ten years ago. One turnkey vendor, recognizing that there are a number of publishers selling under a $1 million per year who want computers, will soon be offering a microcomputer system for between $40-50,000 which can support up to five terminals and maintain a 15,000 customer database. Service bureaux in this country offer on-line order processing and data communications capabilities for those companies who do not want to incur the costs of maintaining a computer system internally. One service bureau plans to offer a 'distributed' system allowing publishers to maintain and manipulate their files internally and not be as dependent on use of telephone lines.

While the technology has changed significantly since the first companies automated in the 1960s, the justification for doing so has not--that is, the desire to process more orders more quickly at a lower cost. For example, in 1958 each order processing clerk at Random House was capable of processing orders valued at $150,000 annually; today each clerk can process orders valued at $2.5 million. McGraw-Hill Book Company, in 1958, had a staff of 150 clerks processing orders valued at $40 million; twenty-five years later their staff of 205 people processes orders valued at $232 million. In one of its locations, Houghton Miffin Company employs less staff than they did twenty years ago, though generating significantly higher volume.

The requirements for a data processing manager also differ from what they were twenty years ago. Today publishers seek data processing managers who are up-to-date with the state of the technology and who have database and data communications experience. While it would be preferable if these professionals came from publishing--and such individuals do exist today--many say they would still look to other industries such as banking, wholesaling, or insurance for data processing experience and expertise.

Training of personnel has become more formalized than in the past. Most companies send their systems and programming staffs to special schools and seminars to learn, for instance, new programming languages or system enhancements. And they provide more of their employees with a basic understanding of the book publishing and distribution process. Order processing clerks are trained by one or a combination of the following: (1) a special internal training staff; (2) supervisors or experienced clerks; (3) self-teaching programmes. Techniques vary from multi-media training using videotapes, audiocassettes and text material to the very personal one-to-one training on a terminal. All training provides current reference manuals for what previously were undocumented systems.

Preconditions for Tomorrow

While priorities for systems development differ among industry organizations, general trends for change are emerging.

Data communications capabilities have been in place for ten years in some companies. However, in the past, communications lines usually connected the main frame computer at one warehouse location to the main frame at another. Today publishers and wholesalers are beginning to develop the protocols to communicate on-line with any of their customers, using a variety of computer hardware. Although there is some question as to whether direct communication will be economically feasible for orders with a large number of line items, some wholesalers are experimenting with on-line receipt of orders telecommunicated by large customers. We expect this to become more prevalent by 1985. As mentioned earlier in this Report, some companies are planning to provide their sales force with hand-held terminals that can be plugged into a telephone for transmitting orders and making inquiries of the company's central computer. BOS, BAS, and MACSNET are further examples of telecommunication steps in the industry's future.

On-line systems are beginning to replace the batch oriented distribution environment that was prevalent through the 1970s, when orders were keypunched during the day and processed at night in 'batches.' Today, credit can be checked and inventory adjusted on-line at the very moment the order is entered into a computer terminal by an operator. One publisher interviewed is trans-

mitting orders hourly to its warehouse location where picking documents are created; others still 'batch' the printing of picking documents and creation of invoices for one or two daily run(s).

Data base management systems, which provide the capability of storing, accessing and manipulating data in a variety of ways, are also becoming more prevalent. Some publishers developed these systems internally at great cost. Today, tested data base systems (such as IBM's Information Management System --IMS) are available. A few publishers are purchasing these systems, although they cost more than most can afford. However, data base systems are also being developed for lower cost mini and microcomputers, which may better fit the needs of the large number of small organizations in the book industry.

Personal computers (PCs) began appearing in the industry over a year ago, and, as is true of the marketplace in general, their acceptance is growing rapidly. Some publishers have installed PCs in a carefully planned manner, allowing the staff to buy the products of only one manufacturer and encouraging the sharing of information on software either purchased or developed in-house; others have allowed their staff to purchase any model they wanted. In some organizations where company policy prohibited the purchase of PCs by other than the data processing department, individuals have bought them with their personal funds. In addition, several book publishers are also purchasing PCs for use in developing their own software products to be sold along with their books. The use of PCs has resulted in less fear and greater understanding of the capabilities of the new technologies within the book industry.

Off-the-shelf business application software packages for PCs have been put to use in the book industry. A Microcomputer Software Survey conducted and published by the Association of American Publishers in December, 1983, indicates that packaged software used by the 48 respondents, serves the following book publishing functions: Editorial (26%); Production (20%); Marketing (21%); Financial (21%); and Budget (12%).

In almost all cases, these computers are stand alone work stations without access to the information residing in the company's main frame. While the applications cited above are not directly book distribution-related, PC users often utilize the title and/or sales information contained in the distribution system resident on the main frame by rekeying the information from printed reports. A few publishers are currently developing the PC/main frame interfaces to provide direct access to the main frame files. We expect more to do so in the future.

SECTION V--CONCLUSION

The new technologies have been implemented slowly into the U.S. book distribution process, generally well after they have found successful application in other businesses. However, the small size of the book industry has allowed it to compromise on standard formats and techniques, thereby providing many with the ability to take advantage of the new technologies as they evolve and become affordable.

The book industry is still a long way from solving many of the problems Cheney iterated in 1931, but we see many areas of distribution where the new technologies can create significant improvements. We are also in a period of dramatic change. Distribution has surfaced as an important concern of the book publishing industry, and innovative applications of the new technologies are entering trial periods as this is written.

When we ask data processing executives in the industry, 'What is on the horizon for the future,' we receive many different answers. However, one thread runs through their responses. It is that systems development in the area of book distribution is an on-going process whose sole purpose is to provide better, more current information for better business management. Since the new technologies help to make that happen, all sectors of the industry should benefit from improved book distribution systems capabilities.

APPENDIX A

LIST OF ABBREVIATIONS

AAP	Association of American Publishers
ABA	American Booksellers Association
ANSI	American National Standards Institute
BAS	Book Acquisition System
BISAC	Book Industry Systems Advisory Committee
BISG	Book Industry Study Group
BOS	Booksellers Order Service
ISBN	International Standard Book Number
MARC	Machine Readable Cataloguing
NACS	National Association of College Stores
OCLC	On-line Computer Library Center
SAN	Standard Address Number
USPS	United States Postal Service

APPENDIX B

ORGANIZATIONS INTERVIEWED FOR THIS REPORT

The Baker & Taylor Co.

Bantam Books Inc.

Brodard, Inc.

Holt, Rinehart & Winston

Houghton Mifflin Co.

Ingram Book Co.

McGraw Hill Book Co.

PCS Data Processing, Inc.

Prentice-Hall, Inc.

Random House, Inc.

STC Systems, Inc.

APPENDIX C

MERGERS AND ACQUISITIONS IN BOOK PUBLISHING

1962-1984

COMPANY	ACQUIRED BY, DATE
Harry N. Abrams	Times Mirror, 1965
Ace Books	Filmways, 1976; Putnam's, 1982
Arbor House	Hearst, 1978
Bantam Books	National General, 1968; Bertelsman, 1977 (51%), 1980 (100%)
Berkeley Books	Putnam's, 1965; MCA-Universal, 1976
R.R. Bowker	Xerox, 1968
Chilton Book Co.	ABC, 1979
T.Y. Crowell	Harper & Row 1977
Dell/Delacorte	Doubleday, 1976
Dial	Dell, 1963
Dodd, Mead	Nelson 1982
E.P. Dutton	Elsevier, 1975; Dyson, 1981
Esquire	Simon & Schuster, 1983
Fawcett	CBS, 1977; Random House, 1982
Grosset & Dunlap	National General, 1968; Filmways, 1974; Putnam's, 1982
Holt, Rinehart & Winston	CBS, 1967
Jove (formerly Pyramid)	Berkeley, 1979
Lippincott	Harper & Row 1978

COMPANY	ACQUIRED BY, DATE
Little, Brown	Time, Inc., 1968
William Morrow	Scott Foresman, 1966; Hearst, 1981
New American Library	Times-Mirror, 1963; private group, 1984
Playboy Press	Putnam's, 1982
Pocket Books	Simon & Schuster, 1966
Popular Library	CBS, 1971; Warner, 1982 (now disbanded)
G.P. Putnam's Sons	MCA-Universal, 1976
Pyramid Books	Harcourt Brace Jovanovich, 1975
Random House	RCA, 1966; Newhouse, 1980
Simon & Schuster	Gulf & Western, 1975
Viking	Penguin, 1975